

# Administração Mercadológica 

# ESTIMATING BRAND EQUITY IN THE CONTEXT OF THE GLOBAL AUTOMOTIVE INDUSTRY 

ESTIMANDO O VALOR DE UMA MARCA (BRAND EQUITY) NO CONTEXTO GLOBAL DA INDUSTRIA AUTOMOBILISTICA

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#### Abstract

RESUMO Este artigo analisa em que medida o valor da marca contribui para o preço de um automóvel. O objetivo desta pesquisa é averiguar se automóveis de preço mais elevado fornecem ao consumidor produtos superiores de modo consistente e se, deste modo, o aumento dos preços é justificado. O presente estudo utiliza uma variação do modelo SDR de Brand Equity para investigar o valor de uma marca. Será feita uma comparação entre os atributos dos produtos e os preços de diversos veículos de fabricantes de automóveis dos EUA, Japão e Alemanha. Os atributos do produto e o preço de cada modelo serão categorizados, comparados e, por fim, serão calculados os pontos do preço por produto. Ao calcular a percentagem de variação dos preços para cada veículo em cada classe de automóveis é possível formular um mapa de valores para todos os modelos. Nossos dados revelam que preços mais elevados não só indicam mais atributos no produto, mas também um preço mais elevado para cada atributo do produto. Deste modo, tanto o preço quanto os atributos do produto aumentam a taxas semelhantes ao longo da linha de valor justo, mas aquelas empresas com produtos de preço mais alto também possuem um valor de marca mais elevado, resultando em um preço maior por ponto do produto. Mostramos que os automóveis alemães têm apresentado um valor de marca consistentemente maior do que os construtores de automóveis japoneses e norte-americanos.


PALAVRAS-CHAVE
marketing internacional; atribuição de marca; brand equity; mapa de valores; indústria automobilística.


#### Abstract

This paper analyzes the extent to which brand equity contributes to the price of an automobile. The purpose of this research is to see whether higher priced automobiles consistently provide the consumer with superior products and in turn, whether the price increase is justified. The paper uses a variation of the SDR Brand Equity model to investigate brand equity. We will compare product attributes and prices of various vehicles from automotive manufacturers from the US, Germany and Japan. We will categorize and compare each model's product attributes and price, and ultimately calculate the price per product point. By calculating the percentage of variance of price for each car within each vehicle class we are able to plot a value map for all models. Our data reveals that a higher price translates not only in more product attributes but also a higher price per product attribute. Therefore, both price and product attributes increase at similar rates along the fair value line, but those companies with higher priced products also have a higher brand equity resulting in a higher price per product point. We show that German cars have consistently higher brand equity than Japanese and US automotive manufacturers.


KEYWORDS
International Marketing, Branding, Brand Equity, Value Map, Automotive Industry.

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## 1. INTRODUCTION

The notion of brand equity is particularly relevant in the context of the global automotive industry. It allows certain automakers to charge a premium price for a product that may ultimately be similar in quality to its lower-priced competitors. From the consumer's perspective, this intangible asset can be a deciding factor in choosing one car brand over another; from the companies' perspective it represents an additional variable in setting a price based on the consumer's willingness to pay. In a world that is increasingly driven by consumerism and branding, it is important to understand the relationship between brand equity and price, and ultimately, quality and price.

This paper analyses the extent to which brand equity contributes to the perceived value and price of selected Japanese, American and German automobiles. We assess the relationship between brand equity, product attributes and price using the SDR Brand Equity model, and address questions like does a higher price translate into a better product? Is such price premium justified? While the concept has been studied over the years (Cohen 1966, Aaker 1991, Lassar, Keller 1993, Mittal and Sharma 1995, Silk 1996), this paper uses a bottom-up approach in estimating brand equity. We conduct an empirical study of the various product attributes and prices of automobiles from the two main producers by country and we assess whether automobiles with similar product attributes may be differently priced due to their brand, which might also be the result of a country-of origin effect (Johansson, J., Douglas, S., and Nonaka, I. 1985).

## 2. BRAND EQUITY

### 2.1 Definition

Brand equity has emerged as a core concept of marketing in recent. Among the most agreed upon definitions of brand equity is that it represents a set of brand assets and liabilities that can either add to or take away from the value of a product or service to the consumer. The term implies that these assets or liabilities are derived from the brand name or logo of the product. Brand equity can provide value to both customers and companies, albeit in very different forms (Aaker 1991, 1996). According to Aaker (1991, 1996), brand equity consists of brand loyalty, brand awareness, brand associations, perceived quality, and other proprietary brand assets such as patents. Alternatively, brand equity has been defined as "the
enhancement in the perceived utility and desirability a brand name confers on a product" (Lassar, Mittal and Sharma 1995). Higher brand equity can be viewed as a source of competitive advantage as it allows companies to charge a price premium, it increases the overall demand of the product and it provides the company with better overall marketing leverage (Bendixen, Bukasa, and Abratt 2003). In other words, high brand equity generates a "differential effect" and in most cases a larger consumer response (Keller 2003a), thereby strengthening brand performance from a customer and financial perspective.

This paper refers to brand equity as the intrinsic value that a brand adds to the tangible product attributes of a product or service (Neal 2002). We therefore assume in this paper that the price increase between two products of identical quality is reflective of brand equity. Brand value however is "the net present value of future cash flows from a branded product minus the net present value of future cash flows from a similar unbranded product" (Laboy 2005). It estimates the worth of the brand to the company and its shareholders (Laboy 2005). Throughout this paper, it is important to constantly recognize which term is being discussed.

### 2.2 Literature Review

The following section outlines the different approaches to measure brand equity. (1) recall technique, (2) company perspective, (3) consumer perspective, and (4) the SDR Brand Equity.

Probably the most known and oldest approach to measure brand equity is the recall technique where "consumers appear to remember the strong brands more than the weak" (Cohen 1966). This approach is applied in a comparative framework and often used with conjoint-analysis where the success or weakness of a brand is measured relative to a competitor. As Cohen (1966) notes, this approach reveals general strength or weakness, but "it is not sensitive enough to the amount of strength in a brand" (Cohen 1966). He developed a variation of the recall technique that considers "the position of recall as the key factor, where the earlier the recall, the more favorable the attitude toward the brand" (Cohen 1966). The position of the recall, meaning the level of recognition of a brand by the respondent, is divided into three levels of consciousness: The first reflects immediate recognition of the brand, while the second and third levels progressively place the brand further back in the interviewees' memory. This method allows for the use of quantitative data through the one-

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question survey of types of questions like "name the brands of product you know." From responses, it is possible to calculate the percentage of users that recognize a brand in first position, second position, and so forth.

Another approach is the company perspective often referenced in the literature as the financial approach taking the perspective of the value of the brand to the company (Kim, Kim, and An 2003). It is a top-down approach for measuring brand equity. It uses the information that gages the total performance of a company, such as the firm's historical income statements, balance sheets and statements of cash flows. Using the firm's income statement, the brand's value is "taken to be the product of two values: (1) its annual "net" after tax profits averaged over time; and (2) a "multiple" (or discount rate), reflecting the brand's equity" (Silk 1996). A top-down approach of this nature assumes the direct relationship between the firm's profitability and brand equity, where strong financial results means a strong brand; conversely, negative earnings may signal poor brand equity. In assuming this single cause-effect relationship, this approach fails to include key factors within the marketing mix that beg consideration (Silk 1996). This approach is also limited by the data it considers. In order to measure brand equity and value more effectively, it is necessary to include aspects of the marketing mix such as price and product attributes.

Consumer perspective has been discussed widely in the literature and it shows the meaning the value of the brand for the customer which comes from a marketing decision-making context (Kim, Kim, and An 2003). There are four main dimension measuring brand equity: brand awareness, perceived quality, brand association, and brand loyalty. These
dimensions have been used and accepted by many researchers (Keller 1993, Yoo and Donthu 2001, Kim, Kim, and An 2003). This approach considers a bottom-up approach to measuring brand equity. In applying this technique, the researcher can study the branded product in itself, or conduct customer surveys. This comparison highlights an estimation of the products' marketing success, or "efficiency" (Neal 2002). This technique assumes that the difference between unit marketing costs, measured by the company, and unit profit margins represents brand equity. Although this addresses the important notion of a price increase for the intangible asset of marketing, it does not consider the fact that product attributes may be the only underlying reason for developing brand equity as perceived quality is only one part of brand equity. A recognized model to measure brand equity was developed by Young \& Rubicam (2004), one of the largest global marketingconsulting firms in the world. Their "Brand Asset Valuator" qualitatively measures brand equity using four elements: differentiation, relevance, esteem and knowledge (Laboy 2005, Young \& Rubicam 2004). In turn, they can derive a brand's vitality and structure, which ultimately reflects brand equity.

A final approach we will consider for measuring brand equity is a variation of the model created by Sophisticated Data Research Consulting. Their SDR Brand Equity Approach combines the bottom-up approach of analyzing product attributes with the top-down approach of price-setting by the firm. Figure 1 shown below will serve as a basic framework for our research. It shows how the value of the product is shaped on the one side by the price and on the other side by the product attributes and the underlying brand equity.


FIGURE 1: Variation of the SDR Brand Equity Model Source: The author

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Therefore we assume the total value of a product is composed of three parts. One part is the physical and readily identifiable product attributes of the brand that delivers specific, tangible benefits to the purchaser, thus impacting purchase choice. We call these the product attributes. The second part represents the perceived intrinsic value associated with the brand name due to such things as the image transferred to the purchaser, trust, longevity in the marketplace, social responsibility, consistent performance, and so forth (i.e. the intangibles). We refer to this as brand equity. The third component is the price of the product. Thus, the total value (or utility) of a product or service for a purchaser is a function of its tangible, deliverable product attributes, its brand equity, and its price.

This brand equity model assumes the combination of the product attributes and brand equity to be the key determinants of product value and indirectly therefore the price. This paper will focus on the relationship between brand equity, product attributes and price, as they are quantifiable and together constitute the total product value for the purchaser.

The brand equity model shown above makes the following main assumptions. First, we assume that consumers are always trying to maximize value. This can be achieved either through paying a lower price or receiving superior product attributes. Second, the value a purchaser attributes to a particular product is equivalent to the total utility that person assigns to each product. Finally, product value is the sum of all product attributes and the brand equity of each product.

## 3. METHODOLOGY

This paper wants to estimate the extent to which brand equity contributes to the final price of various models of automobiles. This will be done by comparing the number and quality of product attributes with the price. Theoretically, a car providing the same number and quality of product attributes to the consumer should have the same price but, reality proves otherwise where two car models with the same number of product attributes have a different price. In this case, the price difference is due to a price premium, allocated for each unique product attribute, which is the result of brand equity. We therefore can write the following. The parameter
$x \varepsilon X$ where $X$ represents the total number (m) of cars. Each car model $x$ has a certain number ( n ) of product attributes $\mathrm{y}_{\mathrm{x}}$ as well as a certain brand
equity $e_{x}$ by car model $x$. Each car model $x$ also has a specific price $p_{x}$. We therefore get the following general equation for a car model $x$ :

$$
\text { with } x^{\text {a }} \quad X ; \quad X=\sum_{i=1}^{m} x_{i}
$$

$p_{x_{i}}=\sum_{j=1}^{n} y_{x_{i} j} \cdot e_{x_{i}}$ and therefore get $: e_{x_{i}}=\frac{p_{x_{i}}}{\sum_{j=1}^{n} y_{x_{i} j}}$
This equation, also simplified, measures brand equity as the "difference" between the price paid and the sum of all product attributes. The brand equity, assumed to be equally distributed for all the product attributes of a specific car $x$, "reside" on each product attribute. That is why each product attribute $y x$ is multiplied by the brand equity ex. Therefore, by dividing the price by the total number of product attributes, we get a proxy of brand equity for a specific car model.

### 3.1 Data Gathering

This paper studies two automakers from three different countries (U.S., Germany, Japan), where for each company three models from the 2007 product line have been selected, resulting in 18 automotive models to be analyzed. The three countries that were chosen represent three of the top five auto-producing nations. The U.S., Germany and Japan account for a combined of almost $50 \%$ of the global auto production (OICA 2006). China, which currently is third in vehicle production, has been omitted, as information on specific manufacturers and models remains scarce. Similarly, we chose the two largest automakers from each country in terms of production. Several companies, which underwent recent cross-border mergers and acquisitions, like Daimler-Chrysler, were omitted from our research as they complicate our national groupings. Three vehicle classes from each manufacturer are chosen: one small-size sedan, one midsize sedan, and one sports utility vehicle (SUV). Furthermore, all data will be gathered for the cheapest base model, with no option packages in order to make it comparable. In order to compare the various models, this paper takes into account 6 broad categories (i.e., mechanical, interior, accessories, performance, comfort, style) which are based on the J.D. Power Quality Ratings. Since 1968, J.D. Power and Associates has been among the most reputable sources for independent

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and unbiased vehicle information and ratings. For each group we have selected key product attributes, which enables a good basis for quality comparisons, in total 22 product attributes for each model (For details see Appendix). A large part of the data will be collected from company websites and local dealers. As the brands included in this paper are all global brands of considerable size and repute, their websites are well developed and will provide reliable basic information on their vehicles.

In addressing the extent to which brand equity contributes to the retail price of each vehicle, we will quantitatively measure the product attributes for each base model. As not all data points can be quantitatively measured, we will use a Likert scale rating to assign a certain number of points to reflect quality attributes. It should be noted that each model will be rated within its car class in order to maintain consistency.

### 3.2 Assumptions and Limitations

The most basic assumption this paper makes is the idea that brand equity accounts for the price differential between two differently branded products with identical product attributes. We assume therefore that stronger brands charge a higher price for their product or product attributes. Further, we assume
that collecting 22 product attributes is sufficient to assess product quality and estimating brand equity. We assume that the two chosen companies from each country are representative of the quality and price of automobiles produced for that entire nation and industry. This paper is limited by qualitative data, forcing the research team to make estimations of the product attributes' worth to consumers by using the Likert scale rating.

## 4. EMPIRICAL RESULTS

### 4.1 Product Feature Points and Price

As part of this analysis, we will also attempt to use this data to graphically show the relationship between brand equity, product attributes and price. This will be done using a value map, where the $y$-axis will be the price variance of each model relative to the mean price of its class, and the $x$-axis the number of product points. The table below shows the different car models analyzed for each group of vehicles. For each model, we provide the number of points earned by our scaling and the price (For details see Appendix). Finally we calculate the price per product point, by dividing the price by the number of product points.

TABLE 1
Price per Product Points

| Group | Car Model | \# of Product Points | Price (USD) | Price per Product Point |
| :---: | :---: | :---: | :---: | :---: |
| Small - Size Sedan | Ford Focus Sedan S | 16 | 14,400 | 900 |
|  | Chevrole t Cobalt LS (GM) | 22 | 13,740 | 624 |
|  | Toyota Corolla | 15 | 14,205 | 947 |
|  | Nissan Sentra 2.0 | 21 | 14,750 | 702 |
|  | BMW 328i | 32 | 32,400 | 1,012 |
|  | Audi A4 2.0TFSI | 25 | 28,240 | 1,129 |
| Mid - Size Sedan | Ford 500 SL | 24 | 23,420 | 975 |
|  | Chevrolet Impala LS (GM) | 25 | 21,630 | 865 |
|  | Toyota Camry C E | 17 | 18,270 | 1,074 |
|  | Nissan Altima 2.5S | 18 | 19,800 | 1,100 |
|  | BMW 525i | 30 | 43,500 | 1,450 |
|  | Audi A6 3.2FSI | 28 | 41,950 | 1,498 |
| SUV | Ford Explorer XLT | 25 | 25,995 | 1,039 |
|  | Chevrolet Trailblazer LS (GM) | 29 | 25,580 | 882 |
|  | Toyota RAV 4 Base | 19 | 21,545 | 1,133 |
|  | Nissan X -Terra X | 21 | 20,050 | 954 |
|  | BMW $\times 53.0$ | 30 | 42,500 | 1,416 |
|  | Audi Q7 3.6FSI | 28 | 39,900 | 1,425 |

Source: The author

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Table 1 classifies our data and shows the price per product point for each model. Based on the number of product points we associated to each model, we divided the price to be paid for each basic model by the total number of product points. We assume that a higher price per product point is accounted for by higher brand equity, thereby allowing a company to charge more for a similar or identical product attribute. According to table 1 we can conclude that on average, the German automakers have higher brand equity as they have the ability to charge a premium over American and Japanese brands on similar product attributes. The next sections provide some further insight.

### 4.2 Analyses

The question to be analyzed is to what extent brand equity contributes to the retail price of each automaker's product. The columns three through five, in the above table, reveal the total number of product points by car model, the price for the basic model. In the fifth column, we calculated the average price per product point for each model by dividing the price ( px ) by its the total number of product points ( y x ). These figures justify the notion that stronger brands, those with higher price and providing more product attributes, charge more on average per product point. While this does not consider the cost of goods sold for any of the models, and it may be higher for BMW and Audi, the fact remains that on average, these companies increase their prices for products similar to their competitors. If we assume that all automakers use the same products in the features above, then
it becomes clear that brand equity accounts for the added price of an individual product attribute.

This paper assumes that the difference in the prices per product point between different models represents different levels of brand equity. So what is the relationship between brand equity, product attributes and price? As our data shows, there is a direct relationship between brand equity, product attributes and price. A higher price translates into more product attributes, as well as a higher price per product point (brand equity). Conversely, a brand with low equity reflects a low price and less product attributes. This can be illustrated in the following value map where we put on the $x$-axis the number of product points earned for each model and on the $y$-axis the price for that model.

In actuality, $y$-axis values will be the percentage variation of each model's price relative to the average price of the chosen models from the same vehicle class. So, we will calculate the mean price of our chosen vehicles from a certain class (small, medium, SUV), and then determine the percentage difference between that mean price and the price of each individual model in the same class.

Although both price and product attributes tend to increase at similar rates, hovering along the value line, it is still apparent from the figure below that those companies with high brand strength and many product attributes seem to always be on top of the line as this is the case for the German automobile makers BMW and Audi with their models. The value map also illustrates that no matter which type of car (small, medium, SUV) the brand equity of a manufacturer is consistent.


FIGURE 2: Value Map Source: The author

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## Does higher brand equity necessarily translate into a better product?

From our analysis, the automakers that were consistently above the fair value line (higher brand equity) produced base models with more product attributes included in the base model. While the actual quality of each product attribute was not studied in great detail in this research, it is recognizable that these vehicles with more product attributes tended to be priced higher and also have a higher price per product point which has been compared between different cars. We therefore conclude that those automakers with higher brand equity produce automobiles with more product attributes, and charge a higher price for their product.

Brand Equity and Country of Origin.
This topic has been research extensively and this paper does not focus specifically on that, but according to our analysis and the value map above, there seems to be a certain pattern, especially for the automakers form Germany. In every class, BMW
and Audi held the highest prices per product points. While both of Toyota's models' showed strength in brand equity over U.S. automakers in the midsize sedan class, this pattern did not hold true in smallsize and SUVs.

It is interesting to take it one step further and compare the price per product point of each model to the average price per product of every car in that class. For small-size sedans, the average was $\$ 886$. Clearly, the German automakers were well above this benchmark, while U.S. and Japanese automakers took turns below and above. In the mid-size class, the average was $\$ 1,160$, again showing German manufacturers' high brand equity and elevated prices. Finally, in the SUV class, the average was $\$ 1,142$ and both German brands were again well above. The following figure illustrates our findings in box-plots where it can be seen that the price per product point is lower for small-size sedan than for mid-size and SUV. Surprisingly there is not a huge difference between the price per mid-size sedan and SUV.


FIGURE 3: Box-Plot Price per Product and Class Source: The author

Our data shows that no matter which brand the category of where the product is positioned (small, medium, SUV) has an influence on the price per points. It was lowest for small-size sedans, and incrementally higher for midsize sedans and SUVs. There is no direct relationship between the different models within each brand, however it is still worth noting that the price per product changed between classes.

## 5. CONCLUSION AND RECOMMENDATION

This paper analyzed the extent to which brand equity contributes to the final price of an automobile for consumers. By using a slight variation of the SDR Brand Equity model as the underlying framework for our study, we were able to assess, group and compare product attributes and prices for various automobiles. This paper has taken into account 18

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different models from 6 automotive manufacturers from 3 different countries. Our results suggest that a higher price translates not only into more product attributes but also into a higher price per product attribute, which is a measurement of brand equity. Therefore, both the price and product attributes increase at similar rates along the fair value line, but those companies with higher brand equity charge higher prices resulting in a higher price per product point. We show that German cars, regardless of manufacturer and vehicle class, have consistently higher brand equity than Japanese and US automotive manufacturers. This demonstrates a country of origin effect, where branding has allowed these German producers to charge more than their American and Japanese counterparts for a similar good. Finally, by calculating the percentage variance
of price for each car relative to its class, and plotting this data on a value map, we were able to visually confirm that those manufacturers with high priced products and high brand equity were consistently above the fair value line. In turn, they are of less relative value that those vehicles that were plotted below the line.

Further research may look to take into account more product attributes than the 22 points that we considered, which might result in further insight into brand equity. Also, a more detailed analysis of non-quantitative product attributes may allow for a better comparison of our vehicles. As automotive manufacturers purposefully withhold specific cost information about their products, we must constantly strive to improve our estimation of product value from information available to the public.

TABLE 2
Appendices. Example for German Automakers


Source: The data above is taken from the automakers websites (See Works Consulted). Some figures taken from Automobile Magazine and Consumer's Guide Auto.

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TABLE 3
Likert Scale Rating

| Small Size Sedan | Product Feature | Likert Scale Rating |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Litreage | 0-2 = 1pt. | >2 $=2 \mathrm{pts}$. | n/a |
|  | Transmission | $5 \mathrm{~S}-\mathrm{M}=1 \mathrm{pt}$. | 6S-M = 2pts. | n/a |
|  | Base Horsepower | $<130=1 \mathrm{pt}$. | $130<h p<140=2 p t s$. | ? $140=3 \mathrm{pts}$. |
|  | Torque | $<130=1 \mathrm{pt}$. | $130<\mathrm{t}<150=2 \mathrm{pts}$. | >150 = 3pts. |
|  | -60 mph | $>8=1 \mathrm{pt}$. | $<8=2$ pts. | n/a |
|  | Suspension | 2xind. $=1 \mathrm{pt}$. | 4/5link = 2pts. | n/a |
|  | Wheels | $15^{\prime \prime}=1 \mathrm{pt}$. | $16^{\prime \prime}=2 \mathrm{pts}$. | n/a |
|  | Colors Offered | $<6=1 \mathrm{pt}$. | $6<\# \mathrm{c}<8=2 \mathrm{pts}$. | ?8 = 3pts. |
|  | Brakes | $2 \mathrm{xDisc}=1 \mathrm{pt}$. | $4 \times$ Disc $=2$ pts. | n/a |
| Midium Size Sedan | Litreage | $0-3=1 \mathrm{pt}$. | ? 3 = 2pts. | n/a |
|  | Transmission | $5 \mathrm{~S}-\mathrm{M}=1 \mathrm{pt}$. | 6S-M = 2pts. | Auto $=3$ pts. |
|  | Base Horsepower | $<200=1 \mathrm{pt}$. | $200<\mathrm{hp}<250=2 \mathrm{pts}$. | >250 = 3pts. |
|  | Torque | $<185=1 \mathrm{pt}$. | $185 ?$ t<210 = 2pts. | ?210 = 3pts. |
|  | -60 mph | $>8=1 \mathrm{pt}$. | $<8=2 \mathrm{pts}$. | n/a |
|  | Suspension | 2xind. strut $=1 \mathrm{pt}$. | 4xind. $=2$ pts. | 4/5link $=3$ pts . |
|  | Wheels | $16^{\prime \prime}=1 \mathrm{pt}$. | 17 " $=2 \mathrm{pts}$. | n/a |
|  | Colors Offer ed | <9 = 1pt. | ? 9 = 2pts. | n/a |
|  | Brakes | $4 \times$ Disc $=1 \mathrm{pt}$. | 4 xVent . Disc $=2 \mathrm{pts}$. | n/a |
| SUV | Litreage | $0-3=1 \mathrm{pt}$. | $3-4=2 p t s$. | ? $4=3 \mathrm{pts}$. |
|  | Transmission | Man. $=1 \mathrm{pt}$. | Auto. $=2$ pts. | n/a |
|  | Base Horsepower | $<200=1 \mathrm{pt}$. | $200<\mathrm{hp}<250=2 \mathrm{pts}$. | >250 $=$ 3pts. |
|  | Torque | <200 = 1pt. | $200<t<250=2 p t s$. | >250 = 3pts. |
|  | -60 mph | ? $8=1 \mathrm{pt}$. | $<8=2 \mathrm{pts}$. | n/a |
|  | Suspension | 2 xind . $=1 \mathrm{pt}$. | 4xind. $=2$ pts. | 4/5link $=3$ pts. |
|  | Wheels | $16^{\prime \prime}=1 \mathrm{pt}$. | $17^{\prime \prime}=2 \mathrm{pts}$. | $18^{\prime \prime}=3 \mathrm{pts}$. |
|  | Colors Offered | $<8=1 \mathrm{pt}$. | 8-9 = 2pts. | $>9=3 \mathrm{pts}$. |
|  | Brakes | $4 \times$ Disc $=1 \mathrm{pt}$. | 2 VVent . Disc $=2 \mathrm{pts}$. | n/a |

Source: The author

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